

What is claimed is:

1. An image processing apparatus, comprising:

a receiving unit for receiving image data based on multiple document images of various sizes and/or orientations; and

a processing unit for processing the received document data so that the multiple document images can be printed on a sheet of paper,

wherein said processing unit comprises an identifying unit for identifying an area which is not yet covered with document images, and a judging unit for judging whether new document image or images can be laid out in said area.

2. An image processing apparatus of claim 1, wherein, if said judgment unit judges that no new document image or images can be laid out in said area, its new document image or those new document images shall be laid out on another sheet of paper.

3. An image processing apparatus of claim 1, wherein said processing unit lays out document images adjacent to each other.

4. An image processing method, comprising:

a receiving step for receiving image data based on multiple document images of various sizes and/or orientations; and

a processing step for processing the received document data so that the multiple document images can be printed on a sheet of paper,

wherein said processing step comprises an identifying
5 step for identifying an area which is not yet covered with document images, and a judging step for judging whether new document image or images can be laid out in said area.

5. A computer program product for image processing, comprising:

10 a receiving step for receiving image data based on multiple document images of various sizes and/or orientations; and

a processing step for processing the received document data so that the multiple document images can be printed on
15 a sheet of paper,

wherein said processing step comprises an identifying step for identifying an area which is not yet covered with document images, and a judging step for judging whether new document image or images can be laid out in said area.

20 6. An image forming apparatus, comprising:

a receiving unit for receiving image data based on multiple document images of various sizes;

a detecting unit for detecting a maximum size of document images based on the received image data;

a selecting unit for selecting paper with a size equal to or larger than the detected maximum size; and

a forming unit for forming images based on the image data on the selected paper.

5 7. An image forming apparatus, comprising:

a receiving unit for receiving image data based on multiple document images of various sizes;

a detecting unit for detecting a maximum size of document images based on the received image data;

10 a calculating unit for calculating a scaling factor that causes the detected maximum size to match with the size of a print area;

a processing unit for scaling up or down the sizes of the document images based on the calculated scaling factor;

15 and

a forming unit for forming images based on the processed image data on the print area.

8. An image forming apparatus of claim 7, wherein the print area is the entire area of paper.

20 9. An image forming apparatus of claim 7, wherein the print area is an area obtained by dividing the entire area of paper to equal parts.

10. An image processing method, comprising:

a receiving step for receiving image data based on

multiple document images of various sizes;

a detecting step for detecting a maximum size of document images based on the received image data;

a calculating step for calculating a scaling factor that
5 causes the detected maximum size to match with the size of a print area; and

a processing step for scaling up or down the sizes of the document images based on the calculated scaling factor.

11. A computer program product for image processing,
10 comprising:

a receiving step for receiving image data based on multiple document images of various sizes;

a detecting step for detecting a maximum size of document images based on the received image data;

15 a calculating step for calculating a scaling factor that causes the detected maximum size to match with the size of a print area; and

a processing step for scaling up or down the sizes of the document images based on the calculated scaling factor.

20 12. An image forming apparatus, comprising:

a receiving unit for receiving image data based on multiple document images of various sizes;

a detecting unit for detecting the size of each document image based on the received image data;

a calculating unit for calculating a scaling factor that causes the detected size of each document image match with the size of a print area obtained by dividing the paper into equal parts;

5 a processing unit for scaling up or down the sizes of each document image based on each corresponding calculated scaling factor; and

10 a forming unit for forming each image based on the processed image data in each print area obtained by dividing the paper into equal parts.

13. An image forming apparatus of claim 12, further comprising a control unit for transmitting the image data processed in said processing unit in such a way that each scaled document image be printed at the center of each print
15 area.

14. An image forming apparatus of claim 12, further comprising a instructing unit for instructing the number of said equal parts.

15. An image processing method, comprising:

20 a receiving step for receiving image data based on multiple document images of various sizes;

 a detecting step for detecting the size of each document image based on the received image data;

 a calculating step for calculating a scaling factor that

causes the detected size of each document image match with the size of a print area obtained by dividing the paper into equal parts; and

5 a processing step for scaling up or down the sizes of each document image based on each corresponding calculated scaling factor.

16. A computer program product for image processing, comprising:

10 a receiving step for receiving image data based on multiple document images of various sizes;

a detecting step for detecting the size of each document image based on the received image data;

15 a calculating step for calculating a scaling factor that causes the detected size of each document image match with the size of a print area obtained by dividing the paper into equal parts; and

a processing step for scaling up or down the sizes of each document image based on each corresponding calculated scaling factor.

20